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| <input checked="" type="checkbox"/> Letter | a. If letter or memo:                    |
| <input type="checkbox"/> Memorandum        | To: M. H. Bartz                          |
| <input type="checkbox"/> Report            | From: H. H. Ferguson                     |
| <input type="checkbox"/> Publication       | Subject: IODINE SKIN ABSORPTION, FER-60- |
| <input type="checkbox"/> Other (Specify)   | 65A                                      |

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Title:

4. Document Date:

September 7, 1965

c. If publication:  
Name:  
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Issue:

5. Summary (2-3 lines indicating the major subject(s) of the document): ref memo, McCaslin to Bartz, McC-115-65A, 8-23-65, attached. Despite issues/problems raised, joint AEC-PPCo experiment is acceptable and defensible provided following three safeguards are followed:

6. Name and telephone number of person completing form:  Burton R. Baldwin (208) 525-0203	7. Organization:  Lockheed Idaho Technologies Co.	8. Date:  March 23, 1995
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## HUMAN RADIATION EXPERIMENTS

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FILE TITLE	IODINE SKIN ABSORPTION FER-60-65A
TOTAL PAGES	
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DOCUMENT NO.: T070261

DOCUMENT TITLE: IODINE SKIN ABSORPTION FER-60-65A

CROSS REFERENCES:

ITEMS OF INTEREST:

Idaho Falls, Idaho  
September 7, 1965

REPOSITORY

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Iodine Skin Absorption  
KER-60-65A

COLLECTION OFFICE OF CHIEF COUNSEL SUBJECT FILES  
23399, UT68 CFA 674E

M. H. Bartz  
CF-607

BOX NO. FILE: SAFETY-16 IODINE RADIATION EXPERIMENT

FOLDER IODINE SKIN ABSORPTION KER-60-65A

Reference is made to the attached memo dated August 23, 1965 addressed to you regarding participation by Phillips personnel in the proposed iodine skin absorption test. As Mr. McCaslin has stated, the use of human volunteers raises a number of policy, medical, and legal questions; especially when reviewed in the light of adverse public reaction to human experiments which followed the disclosures at the Muenzburg trials of World War II experimentations. Some of the same types of problems and objections can be raised irrespective of the fact that the experiment exposures to participating individuals will undoubtedly be tightly controlled and restricted to extremely low levels.

Although it is realized that potential problems in the areas of medicine, public relations, and administration may outweigh the apparent advantages of Company participation in the proposed experiments it is my opinion, from the legal viewpoint only, that the proposed experiment to be conducted jointly by ID and Phillips is acceptable and defensible provided safeguards similar to the following are observed:

1. The experiments will be under close and competent medical supervision, presumably of Dr. George Voelz.
2. An objective and knowledgeable medical opinion, such as that of local radiologists, finds that the experiment would produce desirable and useful medical and health-physics information.
3. Dr. Voelz, or his alternate, will address a letter to each participating employee explaining the nature of the experiment, the manner in which it will be conducted, and the degree of potential hazard, if any, involved. Such a letter would provide for a statement by each volunteer to the effect that he has read the statement, understands it, and agrees voluntarily to accept whatever risk is involved in his participation. It should be made clear that the participation will be within the scope of each volunteer's employment.

I shall be glad to discuss these problems further at your convenience.

HHFerguson:tc

COPIES SIGNED BY  
H. H. FERGUSON

cc: J. P. Lyon  
L. L. Leedy  
J. W. McCaslin  
O. L. Cordes  
H. H. Ferguson - 2 ✓



Idaho Falls, Idaho  
August 23, 1965

RECEIVED

M. H. BARTZ

AUG 23 1965

INTER-OFFICE CORRESPONDENCE / SUBJECT:

Iodine Skin Absorption  
McC-115-65A

Mr. M. H. Bartz  
CF-607

Attached is a proposal from O. L. Cordes for us to participate in collecting data from an experimental release of methyl iodine-131. ID Health and Safety plans this experiment in the CERT series for about the first full week in September, 1965.

Some added explanation is in order. Ormand's proposal for six Phillips human volunteers to measure skin absorption of methyl iodide is to be coordinated with a similar number of ID human volunteers who will inhale (and absorb) the same atmosphere for the same length of time. The intent, of course, will be to determine the total thyroid exposure and the fraction resulting from each of inhalation and absorption.

We may, at the same time, place six more volunteers in the same atmosphere. These last six will have both respiratory and absorption protection so that we may test the effectiveness of our equipment.

These measurements are part of a research project we proposed to ID about a year ago. On several occasions we have detected thyroid exposures to men who seemed to have been well protected from inhalation doses. We have suspected, without proof, that these exposures resulted primarily from skin absorption. Our proposal to ID was to prove or disprove this theory.

The data will be valuable not only to health physics in general but also directly to several of our projects. LOFT, for example, is likely to involve re-entry into atmospheres containing radio-iodine. The results of the proposed tests would have a significant influence on the protective devices required for such re-entry. Similar situations may well occur in other scheduled projects.

The results should also be applicable to accident preparedness and follow-up. Knowledge of the rate of absorption through the skin of various chemical forms of radio-iodine would be very valuable in the defense and handling of accident exposure victims. Of course, this proposed experiment could yield data only in regard to the particular chemical form of iodine and the specific conditions. It would, however,

*why not ask ID to  
supply 12 men and  
do the experiment for us?*

*WB*

*See A 4.  
JRM*

M. H. Bartz  
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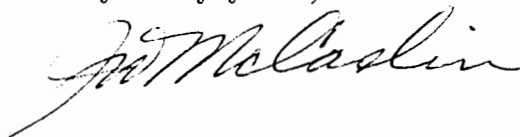
be a significant start and could well assist in the building of a good reputation in the research aspects of health physics.

There are some new and unusual aspects of the proposal. The use of human volunteers is not routine and should be considered carefully. On the other hand, they have been used in radiation research, and even more extensively in other toxicological experiments. ID's human volunteers will certainly receive a greater exposure than ours, so that there should be no difficulty in obtaining AEC approval (unless ID is also forced to cancel its plans). The estimated thyroid exposure for the inhalation volunteers is 30 mrem. This is one-twelfth (1/12) of one day's exposure on the basis of our administrative controls. Absorption exposure is sure to be less. An equivalent whole body exposure, then, would be less than 5 mrem.

The proposal seems well based. I recommend we support it. We should obtain the approval of our Medical Department and of our legal counsel as soon as possible in order to proceed with plans and preparations.

Very truly yours,

JW McCaslin:as



Attachment

cc: M. H. Bartz  
O. L. Cordes  
J. W. McCaslin - 2